



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/796,976	03/11/2004	Ho-Chieh Yu	BHT-3230-98	4047
7590 TROXELL LAW OFFICE PLLC SUITE 1404 5205 LEESBURG PIKE FALLS CHURCH, VA 22041			EXAMINER	
			WARTALOWICZ, PAUL A	
			ART UNIT	PAPER NUMBER
			1793	
			MAIL DATE	DELIVERY MODE
			12/23/2008	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/796,976	<b>Applicant(s)</b> YU ET AL.
	<b>Examiner</b> PAUL A. WARTALOWICZ	<b>Art Unit</b> 1793

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If no period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED. (35 U.S.C. § 133).

Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1) Responsive to communication(s) filed on 16 October 2008.

2a) This action is FINAL.      2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4) Claim(s) 1,2,6,8 and 9 is/are pending in the application.

4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

5) Claim(s) \_\_\_\_\_ is/are allowed.

6) Claim(s) 1,2,6,8 and 9 is/are rejected.

7) Claim(s) \_\_\_\_\_ is/are objected to.

8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All    b) Some \* c) None of:  
 1. Certified copies of the priority documents have been received.  
 2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) Notice of References Cited (PTO-892)  
 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)  
 3) Information Disclosure Statement(s) (PTO-166/08)  
 Paper No(s)/Mail Date \_\_\_\_\_

4) Interview Summary (PTO-413)  
 Paper No(s)/Mail Date \_\_\_\_\_

5) Notice of Informal Patent Application  
 6) Other: \_\_\_\_\_

## DETAILED ACTION

### *Response to Arguments*

Applicant's arguments filed 10/16/08 have been fully considered but they are not persuasive.

Applicant argues that based on the disclosure of Tao, one of ordinary skill in the art can not assume that the composition is a cuprate as opposed to a manganite and that in accordance with Parker [3], there is a difference in the electrical properties between Cu-doped manganite and Mn-doped cuprate.

However it appears that Park [3] also teaches that once doping of a Cu-doped manganite reaches a certain point (critical percolation threshold), then Cu-O-Cu paths would form and conduct as percolation paths. Park [3] also teaches that one can convert a cuprate to a manganite at page 966. It appears that Park teaches that a manganite can take on the attributes of a cuprate and effectively become a cuprate once doping of a Cu-doped manganite reaches a certain point (critical percolation threshold). Additionally, Tao teaches a composition where copper is in a greater concentration than manganese [0011]. Thus, it appears that the concentration of copper is above the critical percolation threshold. Therefore Tao teaches a cuprate.

Applicant argues that Coetzer does not teach a lanthanide cation.

However instant claim 1 does not require a lanthanide cation because it recites "X is greater than or equal to 0 and less than **or equal** to 1".

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1, 2, 6, 8, and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tao 2002/0015877 in view of Coetzer '215.

Tao teaches a material for solid state cathode [0011], lines 1-3, having the general form of  $\text{La}_x\text{Mn}_y\text{A}_a\text{B}_b\text{Cu}_c\text{O}_d$  where A is an alkaline earth metal, B is scandium, yttrium or a lanthanide metal, C is iron, cobalt, nickel, copper or zinc, x is from 0 to about 1.5, y is from 0 to about 1, a is from 0 to about 0.5, b is from 0 to about 0.5, c is from 0 to about 0.5, and d is between about 1 and about 5 [0011] wherein at least one of x, y, a, b, and c is greater than zero (this meets the limitation wherein copper is partly converted to trivalent ion as met by the formula  $\text{CuO}_3$ , [0011], lines 16-18, and the materials for cathode in a solid oxide fuel cell is operable at a temperature of 400°C to

2000°C [0007], lines 8-10. Tao teaches introducing ions having valence numbers of less than four in a lattice structure (trivalent copper is an ion having a valence number of less than four, [0037], lines 25-30, in a lattice structure for the purpose of having extra oxygen anion vacancies in the crystal lattice [0037], lines 27-30.

It would have been obvious to one of ordinary skill in the art at the time applicant's invention was made to provide introducing ions having valence numbers of less than four in a lattice structure in Tao in order to have extra oxygen anion vacancies in the crystal lattice as taught by Tao.

Tao fail to teach that the anode is doped with alkaline earth metals.

Coetzer teach an electrochemical cell comprising a solid oxide cathode (col. 1) and an anode comprising an alkaline earth anode (col. 4) because the material of the anode is chosen so that it is chemically compatible with the oxide starting material.

Therefore it would have been obvious to one of ordinary skill in the art at the time applicant's invention was made to provide an anode comprising an alkaline earth anode in Tao because the material of the anode is chosen so that it is chemically compatible with the oxide starting material comprising substantially similar elements as taught by Coetzer.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to PAUL A. WARTALOWICZ whose telephone number is

(571)272-5957. The examiner can normally be reached on 8:30-6 M-Th and 8:30-5 on Alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stanley Silverman can be reached on (571) 272-1358. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Paul Wartalowicz  
December 18, 2008

/Steven Bos/  
Primary Examiner  
A.U. 1793